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ABSTRACT

Conceptual level is a personal characteristic that describes persons on a developmental hierarchy of increasing conceptual complexity, self-responsibility, and independence. The relationship between gender and conceptual level was explored in a group of 70 male and 63 female college students. The This I Believe Test (TIB) was administered to determine conceptual level; subjects indicated their beliefs about various social and personal concepts. Tests were scored in the recommended global manner, with individuals classified according to conceptual level criteria (level one as most concrete and level four as most abstract) and the scores reflecting subjects' total set of responses. The distribution of subjects within each conceptual level approximated the results yielded from other research; the distribution of females and males within conceptual levels was approximately equal. No significant differences were found between male and female subjects. These findings demonstrate that the cognitive functioning of females is equivalent to that of males across the four levels. (NRB)

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THE EFFECT OF GENDER ON CONCEPTUAL LEVEL

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The Effect of Gender on Conceptual Level

Thinking processes have been examined from many points of view, some of which seek to ascertain how gender affects thinking (Maccoby, 1966). Thinking tasks which require spatial skills and arithmetic reasoning have been found to be superior in male children while verbal skills have been found to be superior in female children.

Witkin, Dyk, Faterson, Goodenough and Kays (1962) have found female-male differences in analytic ability in the Embedded-Figure Test. These authors describe the approach used by males as analytic while that used by females as dependent on external cues. Witkin, et al., (1962), have observed that these differences exist as early as eight years of age. They further suggest that gender differences exist where the intellectual task requires analysis and presume that the differences in female-male abilities rests on women's preference for reliance on external cues. Witkin, et al., (1962) wrote that the nonobservable nature of the female reproductive system results in a less clear body concept that may affect articulation of experience. Males are more likely, perhaps because of the insistence of penile erections to be more differentiated than females.

Maccoby (1966) enlarges on Witkin's idea, and points out that women's field dependency, coupled with the general female lack of analytic ability produces a structure which makes independent thinking difficult. A passive-dependent-conformist personality dimension,

therefore, underlies the female thinking process.

Although IQ scores for females and males do not differ (Kagan, Moss & Sigel, 1963), IQ scores correlate differentially on an activity-passivity dimension. Witkin, et al., (1962) found that assertiveness and being active correlated with field independence, which correlated with the WISC (Wechsler Intelligence Scale for Children). More boys than girls were motorically active, perhaps leading researchers to the conclusion that boys were more apt to score highly on an intelligence scale.

Factors such as dependence on a supportive environment, tolerance of ambiguity and flexibility are also important factors in thinking and personality (Harvey, 1966). Further research in this area is required. Harvey, Hunt and Schroder (1961) have developed a personality measure, the This I Believe Test (TIB), which taps the above-mentioned qualities. Conceptual level is defined as a personal characteristic that describes persons on a developmental hierarchy of increasing conceptual complexity, self-responsibility and independence. Persons can be classified from low to high. Persons low in conceptual level are less capable of generating their own concepts. As conceptual level increases, the person becomes more capable of generalizing his/her own concepts.

Low conceptual level subjects are dependent on a supportive environment. High conceptual level subjects generate their own concepts, possess internal standards, and are able to consider

different views. These subjects require less structure in order to perform optimally (Hunt, Joyce, Greenwood, Noy, Reid, and Weil, 1974).

The characteristics which are tapped by the TIB are consonant with those which Witkin, et al. (1962) and Maccoby (1966) ascribe as belonging distinctly to males or females. Specifically, more concrete attributes are "female-like" while more abstract attributes are "male-like." Although scores on the TIB separate subjects into 4 levels, level 1 being the most concrete, and level 4 being the most abstract, no research on female-male differences has been conducted. Along these lines, level 1 and 2 subjects exhibit the following characteristics. They use either-or dichotomies in making decisions; they are intolerant of ambiguity; they demonstrate a strong need for consistency, are rigid, conventional, and externally motivated. Levels 3 and 4 subjects exhibit polar traits. These subjects discriminate by degrees, are low on F and D scales, are flowing, flexible and internally motivated. They are impressed by expertise and do not demand consistency.

Major differences exist between level 1 and level 2 subjects. While both levels 1 and 2 subjects are rigid and conventional, level 1 subjects are more inclined to conform to the mores of the structure (Harvey, 1966). Level 2 subjects, on the other hand, while equivalently influenced by structure, are more likely to rebel and reject the structure.

Level 3 and level 4 subjects, while sharing some common traits, also demonstrate distinct characteristics. Level 3 subjects who are more flexible than level 1 and 2 are more conventional than level 4

subjects. These subjects are characteristically influenced by friends. Level 4 subjects demonstrate the greatest amount of flexibility and freedom from influence by external stimuli, including friends and family.

Those traits possessed by subjects who produce levels 1 and 2 responses on the TIB are more like those characteristics described by Maccoby (1966) and Witkin, et al., (1962) as being found in females. Responses from levels 3 and 4 subjects more closely resemble traits described as "male." We take issue with these findings. Our study examines the hypothesis that gender does not have an effect on conceptual level as determined by subjects' scores on the TIB.

METHOD

The subjects were 70 male and 63 female undergraduate students attending a moderately sized four year liberal arts college in the northeast. The students ranged in age from 18 to 38 years of age and were registered in introductory psychology courses during the day session of the college. These were 80 Anglo Americans, 33 Cuban Americans, 12 Hispanic Americans, 6 Black Americans, 2 Orientals and 1 American Indian. The present sample reflected, proportionately, the ethnic distribution of the college as a whole.

The This I Believe Test (TIB) was originally constructed by Harvey (1964) to measure four conceptual levels. The instrument consisted of seven open-ended sentences to be completed by the subjects.

Subjects respond to the sentence stems by indicating their beliefs regarding a number of social and personal concepts. Each sentence begins with the stem "This I believe about . . .". The following referents are responded to: friendship, the American way of life, religion, marriage, revenge and lying. These sentences are presented in a booklet entitled "Opinion Survey", with each page containing one concept referent.

Individuals are classified according to conceptual level criteria (level 1 subjects being the most concrete and level 4 subjects being the most abstract) and the scores reflected the subjects' total set of responses. This "global" approach, i.e., giving a composite score for the seven TIB tasks, has been found to produce a higher reliability and validity score than using a procedure employing individual item analysis (Harvey, 1966).

Greaves (1971) in a study conducted to examine flexibility of the responses of college students to profiles of a source person, reported a test-retest reliability of .80. In this same study, Greaves also demonstrated high predictive validity and high construct validity when using the TIB to predict opinion change. Harvey (1966), in examining subjects' responses to status change of profiles of a source person, found the TIB demonstrated high predictive validity when used to predict degree of change of subjects' attitudes.

In all the reported studies using the TIB, level 1 through 4 representatives have reported differences along the concreteness-abstractness dimension. Concrete individuals (levels 1 and 2) are

more conventional, demonstrate greater intolerance for ambiguity and are less creative (Harvey, 1966). Polar qualities are found among the more abstract (levels 3 and 4) individuals.

Subjects were tested in their regular classroom situation by their regular professor. Each subject received a booklet which contained a demographic data sheet and the This I Believe Test. The subjects were instructed as follows: "Complete the demographic data sheet and wait for further directions." When every subject had completed this sheet they were told, "A time limit of two minutes per task will be imposed. I will notify you when the time limit has been reached. Do not turn the page until you are instructed to do so. Begin the first task." The complete procedure took approximately 20 minutes. The booklets were then collected by the administrator.

The TIB was scored in the recommended "global manner," i.e., an overall score was assigned to each subjects' response set. Scores for each item were recorded on the lower portion of the demographic data sheet and transferred to computer cards for analysis.

RESULTS

The distribution of subjects within each conceptual level approximated that which was found by other researchers (Harvey, 1966; Harvey, Hunt and Schroder, 1961). Table 1 presents this overall distribution.

Table 1

Distribution of Subjects According to Conceptual Level

	Absolute Frequency	Relative Frequency (%)
Level 1	47	35.33
Level 2	29	21.80
Level 3	46	34.59
Level 4	11	8.20
TOTAL	133	100

The distribution of females and males within conceptual levels is approximately equal. This supports the notion that females and males operate to the same extent on each conceptual level. These data appear in Table 2.

Table 2

Distribution of Females and Males According to Conceptual Level

	FEMALES		MALES	
	Absolute Frequency	Relative Frequency (%)	Absolute Frequency	Relative Frequency (%)
Level 1	23	32.86	23	37.09
Level 2	19	27.14	10	16.12
Level 3	23	32.86	23	37.09
Level 4	5	7.14	6	9.67
	70	100.00	62	100.00

In order to determine the significance of the differences between females and males, a one-way ANOVA was performed. No significant effects were found and these results are presented in Table 3.

Table 3

Analysis of Variance on Conceptual Level Scores for Females and Males (N = 133)

Source	df	MS	F	p
Sex	1	.193	.183	NS
Residual	132	1.056		

DISCUSSION

The results of the present study may be important in two ways. First, this study opens the door that encourages further questioning of the issues relating to assumed female-male differences in cognitive processes. Second, these results demonstrated that females and males both function to an equal extent on all four conceptual levels.

It is interesting to examine the results more closely. Table 2 shows that at conceptual levels 1, 3 and 4, both females and males are almost equally represented. Only at level 2, characterized by rebellion and rejection of structure, is there any remarkable although non-significant difference between the genders. If the TIB is a reliable and valid instrument (Greaves, 1971; Harvey, 1966), then we have provided evidence which demonstrates that the cognitive functioning of females is equivalent to that of males across the four levels. Females, at least in this study, performed on an abstract (a domain proclaimed as dominated by males) to an equal degree.

This study initiates research in an area which requires further investigation. To arrive at scientifically sound conclusions, we must stretch the assumed boundaries and push into new areas.

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